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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/741,532	12/19/2003	Kimberly A. Johnson	KPR-W0011	5145

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KRATON POLYMERS U.S. LLC
WESTHOLLOW TECHNOLOGY CENTER
3333 HIGHWAY 6 SOUTH
HOUSTON, TX 77082

EXAMINER

PEZZUTO, HELEN LEE

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/741,532

Applicant(s)

JOHNSON, KIMBERLY A.

Examiner

Helen L. Pezzuto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claims 1-15 are currently pending in this application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US-145) or Graafland et al. (US-944) in view of Bening et al. (US-582).

Re. 27,145 to Jones discloses a living polymerization process of preparing hydrogenated A-B-A (styrene-diene-styrene) block copolymer in the presence of a polar compound, which serves to control the degree of branching in the polybutadiene block. Prior art process steps include first admixing alkenyl aromatic monomer, solvent, a polar compound, and a alkyl lithium anionic initiator to form an alkenyl aromatic block, and subsequently adding butadiene thereto and continue the polymerization; and thereafter further introduce alkenyl arene to obtain the ABA block

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copolymer, and hydrogenate the resulting ABA block copolymer (col. 2, line 57 to col. 3, line 4; col. 4, lines 50-73). Suitable branching control agent includes the instant diethyl ether. The precise amount of the branching control agent used depends on the identity of the agent, the degree of branching desired, solvent used and the amount of the lithium initiator used (col. 3, lines 43-55). Typical hydrogenation catalyst includes cobalt nickel (col. 5, line 37). The examiner is of the position that the instant amount expressed in claims 4-5 is readily envisaged and determined by routine experimentation, in light of patentee's criteria taught.

Similarly, US 5,795,944 to Graafland et al. discloses an anionic polymerization process of forming diene polymer such as A-B-A (styrene-diene-styrene) block polymer in the presence of a microstructure control agent, specifically used to control the degree of branching in the diene polymer moiety. Suitable microstructure control agent includes the instant diethyl ether. The amount of which depends on the identity of the agent, the desired level of branching, and the temperature profile of the polymerization. Prior art discloses sequential or simultaneous polymerization (col. 3, line 5 to col. 4, line

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2), using conventional anionic initiator and inert solvent. Prior art further teaches adding the microstructure control agent at the onset of the polymerization process (col. 5, lines 4-10). Patentees exemplified the preparation of styrene-butadiene-styrene block copolymer using 1,2-diethoxy ethane as the branching agent in the instant amount, follow by hydrogenation of the resulting polymer. The examiner is of the position that it would have been obvious to one skilled in the art to use the instant diethyl ether in the exemplified amount because they were taught to functional equivalently as microstructure control agent in the reference.

The prior art references discussed above do not expressly exemplify the use of methanol as a termination agent, and the use of a coupling agent. The examiner is of the position that the use of termination agent and coupling agent in the preparation of block polymer is conventional practice, as shown in analogous US 2003/0176582 A1 to Bening et al. This reference teaches using methanol as suitable terminating agent as one of the post-polymerization steps in order to modify the configuration of the resulting block polymer (page 7, [0077]). Bening et al. further teach controlling the distribution of A-B-A

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diene/alkenyl arene/diene triblock copolymer by either sequential polymerization of the use of coupling agent (pages 6-7, [0075]-[0076]). Accordingly, it would have been obvious to one skilled in the art to use a terminating agent and a coupling agent in the preparation ABA triblock polymer, motivated by the reasonable expectation of success as expressly taught. Thus, rendering obvious the instant invention.

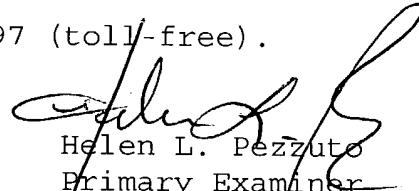
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Helen L. Pezzuto
Primary Examiner
Art Unit 1713

hlp